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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,524	10/30/2003	Toshihisa Hayami	10973-109001	8153
26211	7590	03/16/2005	EXAMINER	
FISH & RICHARDSON P.C. CITIGROUP CENTER 52ND FLOOR 153 EAST 53RD STREET NEW YORK, NY 10022-4611			HUANG, SIHONG	
			ART UNIT	PAPER NUMBER
			2632	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/697,524

Applicant(s)

HAYAMI, TOSHIHISA

Examiner

Sihong Huang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/30/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. Patent No. 5,511,161) in view of Wittmeier et al. (U.S. Patent No. 6,325,528).

Regarding claim 1, Sato et al disclosed an apparatus comprising:

a sub-control circuit (e.g. any one of 4-6) for controlling a motor (M);

a main control circuit (3) for sending out to the sub-control circuit (4-6) a control signal to control the motor;

wherein the sub-control circuit comprises a power-on resetting circuit (lines 8-9 and 17-18 of the abstract and col. 3, lines 2-3 and 30-31) for implementing a reset by switching on and off a power supply (col. 3, lines 25-32); and

wherein the main control circuit (3) comprises power supply control means (8) for temporarily cutting off the supply of power to the sub-control circuit (4-6) when the main control circuit (3) detects an abnormality in the sub-control unit (lines 11-17 of the abstract and col. 3, lines 35-45).

Sato et al differ from claim 1 of the present invention in that Sato et al do not disclose that the apparatus is used for controlling the direction of a light-emitting optical axis of a headlamp of a vehicle. However, it is well recognized in the art that in an Adaptive Front-

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lighting System (AFS) motors are used to change the illumination direction of the headlamps of a vehicle. As Sato et al do not limit their apparatus to any particular applications, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the apparatus of Sato et al to drive or change the illumination direction of a vehicle headlamps. One of ordinary skilled in the art would have been motivated to do this because it eliminates certain lines connections (col. 1, lines 52-53), provides cheap construction (col. 2, lines 13-15), and minimize the influence on the whole system (col. 5, lines 4-12). Once the apparatus of Sato et al is used for driving the rotation of a vehicle headlamp by the motor (M), the claimed "optical axis direction changing means for changing the direction of a light-emitting optical axis of a headlamp of a vehicle" is met by the motor M of the apparatus of Sato et al, the "sub-control circuit for controlling the optical axis direction changing means" is met by any one of subunits 4-6 (sub-control circuit) since it controls the motor M (direction changing means), and "main control circuit for sending out to the sub-control circuit a control signal for changing the direction of the optical axis of the headlamp" is met by the main control circuit (3) which sends out control signals to the subunits (any one of 4-6) which in turn controls the motor M (direction changing means).

The modified apparatus of Sato et al as discussed above further differ from claim 1 of the present invention in that it does not disclose that the sub-control circuit is integrated on the headlamp. However, as taught by Wittmeier et al, mounting electrical circuit (10) on a vehicle headlamp (1) is extremely well known in the art. Based on this teaching, it would have been obvious to a person of ordinary skill in the art at the time of the invention to mount a subunit (sub-control circuit) of Sato et al on each vehicle headlamp as taught by Wittmeier et al in order

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to simplify in construction (col. 2, lines 25-28 of Wittmeier et al) and provide readily access for repair.

Regarding claim 2, Sato et al disclosed that the main control circuit periodically transmits and receives information between itself and each sub-control circuit. When the main unit detects that sub-control circuit or subunit has run away (abnormal), power shut off means cuts off the power supply to the subunit or sub-control circuit (col. 3, lines 39-44 and lines 14-17 of the abstract). Therefore, obviously the main unit will continuously make the power supply control means to maintain the power supply cut off state as long as the run away state is detected.

Regarding claims 3 and 5, Sato et al disclosed that the CPU1 of the main control circuit (3) sends chip selection signals to select a CPU of a subunit to be communicated (col. 4, lines 50-57). The selection signals can be considered as a "request" since the select signals select a subunit for communication, therefor, it is in a way of requesting one of the subunits 4-6 for communication. As disclosed by Sato et al in col. 3, lines 39-41, information is transmitted and received between the main control circuit and each of the subunits 4-6 via communication lines (e.g., serial type communication line (col. 3, line 41) or parallel type communication lines or bus (col. 4, lines 53-55)). Therefore, when the selection signals select one of the subunits for communication, the selected subunit will receive and transmit information from and to the main unit 3, the information sent to the main unit can be considered as a "reply". Consequently, the selection signals can be considered as "request-a-reply signal". As disclosed in col. 3, lines 43-45, when the CPU of the subunit runs away (abnormal), the communication is interrupted. When the communication is interrupted, no appropriate reply signal can be received by the CPU1 of the main unit. In response to this runs-away (abnormal condition) of the CPU2 of the subunit, the

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CPU1 of the main unit cuts off the power supply to the subunit through the power shut-off means (power supply control means) (lines 14-17 of abstract). Note, the power supply control means is for cutting off the supply of power to the sub-control circuit or subunit, therefore, when the power supply control means is activated, it means activating the shutting off of the power supply.

Regarding claims 4 and 6, although Sato et al do not specifically disclose activating the power supply control means (or activating the power shutting off means) when a reply signal is received from a subunit without requesting by the main control unit, it is a good indication that there is something wrong with the subunit when the subunit sent out a signal or some signals for which the main unit did not request or ask for. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to activate the power supply control means (or activating the power shutting off means) in order to provide safety when the main unit receives a signal for which it didn't request for since it is a good indication of a likelihood of something is wrong with the subunit.

Regarding claim 7, although the combination of Sato et al and Wittmeier et al does not disclose the optical axis is reset to an initial position when the power supply is maintained in cut off state, examiner takes Official notice that it is well known that electrical apparatus always returns to its initial position when there is a power failure (for example, a computer). Therefore, it would have been obvious to have the combination apparatus of Sato et al and Wittmeier et al to return to its initial position when the power supply maintained in cut off state in order to provide safety.

Regarding claim 8, if it is not inherent, it would have been obvious to change the direction of the headlamp of a vehicle in according to the steering angle of the steering wheel of

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the vehicle in order to properly provide illumination for the vehicle in the direction of traveling.

Otherwise, it defeats the purpose of the headlamp.

Regarding claim 9, the modified apparatus of Sato et al does not disclose that the direction changing means and sub-control circuit are integrally accommodated as a single unit. However, Wittmeier further disclosed that the motor 9 (direction changing means) and control circuit (10) are integrally accommodated as a single unit (1). Based on this teaching, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the subunit 4-6 (sub-control circuit) and motor M (direction change means) in a simple and compact construction (col. 2, lines 25-28 and Wittmeier et al) for saving space and to provide readily access for repair.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujii et al (JP 405007690A) is cited to show a similar abnormality (e.g., runaway microprocessor) detection and determination (e.g., no reply to a request signal) in microprocessor as well as similar actions (e.g., cut off power supply and resetting the abnormal microprocessor) being taken as to the present claimed invention.

Kondo et al (US Patent No. 6,729,749 B2) and Toda et al (US Patent No. 6,305,823 B1) are cited to show automatic vehicle headlight axis direction control with failure detection.

Fujita et al (US Patent No. 6,411,872 B1) is cited to show a vehicle controlling apparatus including resetting the CPU when run-away is detected.

Ozawa et al (US Patent No. 6,676,283 B2) and Couillaud et al (US Pub. No. 2002/0075691 A1) are cited to show vehicle headlamp control circuit and control means are integrated into the headlamp housing.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sihong Huang whose telephone number is 571-272-2958. The examiner can normally be reached on Mon, Thu & Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sihong Huang  
March 7, 2005

A handwritten signature in black ink, appearing to be 'Sihong Huang', with a large, stylized loop at the end.